

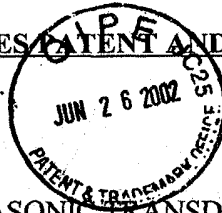
COPY OF PAPERS  
ORIGINALLY FILED

#10/C  
Hawkins  
PATENT 7/12/02

S/N 09/577,805

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Thomas T. Hansen et al.  
Serial No.: 09/577,805  
Filed: May 24, 2000  
Title: HIGH POWER ULTRASONIC TRANSDUCERS



Examiner: Judson Jones  
Group Art Unit: 2834  
Docket: 1063.004US1

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Commissioner for Patents  
Washington, D.C. 20231

Applicant has reviewed the Office Action mailed on March 21, 2002. Please amend the above-identified patent application as follows.

RECEIVED  
JUN 28 2002  
TECHNOLOGY CENTER 2800

IN THE SPECIFICATION

Please make the paragraph substitutions indicated in the Appendix entitled Clean Version of Amended Specification Paragraphs. The specific changes incorporated in the substitute paragraphs are shown in the following marked-up versions of the original paragraphs:

**Please amend the first complete paragraph beginning on page 6, line 11 as follows:**

High power ultrasonic transducers and ultra-high power ultrasonic transducers are disclosed. The transducers each include a housing having a predetermined geometry and one or more motor assemblies. Each motor assembly has one or more active elements made from a smart material, such as a magnetostrictive material. Each motor assembly also [has] is connected to means for producing an electromagnetic field that extends through at least a portion of the active element. Each active element is changeable between a first shape when in the absence of an electromagnetic field or in a low magnetic field and a second or elongated shape when in the presence of the electromagnetic field or in a higher magnetic field. Means for providing an electrical signal to the means for producing an electromagnetic field is included. An acoustic element is connected to the transducer for channeling ultrasonic energy to perform work.

**Please amend the last paragraph beginning on page 30, line 30 as follows:**

In designing a suitable master wave-guide 1204, it is important that the acoustic impedance characteristics of the mode stabilizer 1204a be close to both that of the drive rod 1342 and the output amplifier 1204b. This is achieved with the use of a high speed of sound material noted above for the mode stabilizer 1204a and a titanium material for the output amplifier 1204b.